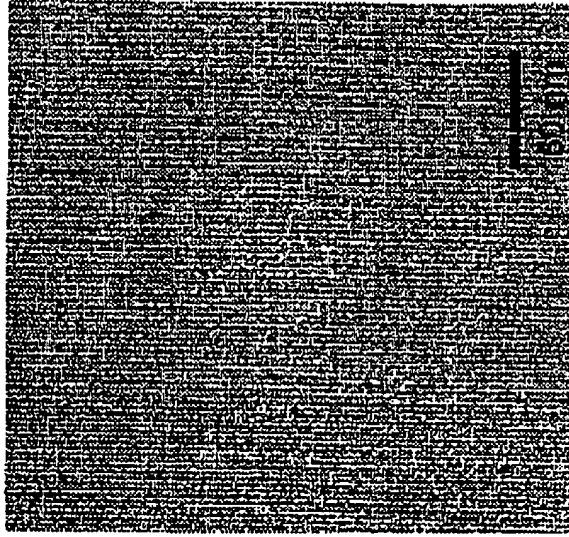


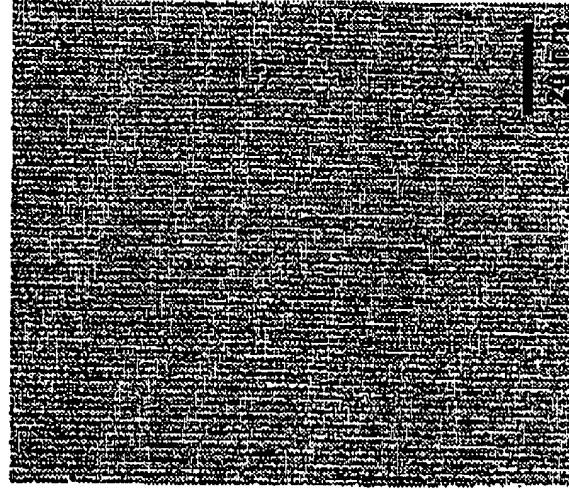
Figure 1. Transmission electron micrographs of the Cu oxide nanoparticles in polyimide formed by the method of the present invention (left: low magnification, right: high magnification).

PAA/Cu (10 nm) curing, 350°C, 2 hrs

Low magnification



High magnification



Particle size: 4.3 nm

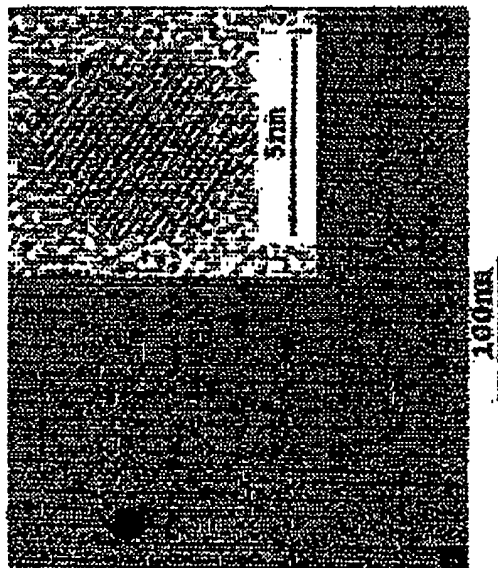
Particle density:  $2.3 \times 10^{12}$  particles/cm<sup>2</sup>

➡ Very uniform and dense particles formed.

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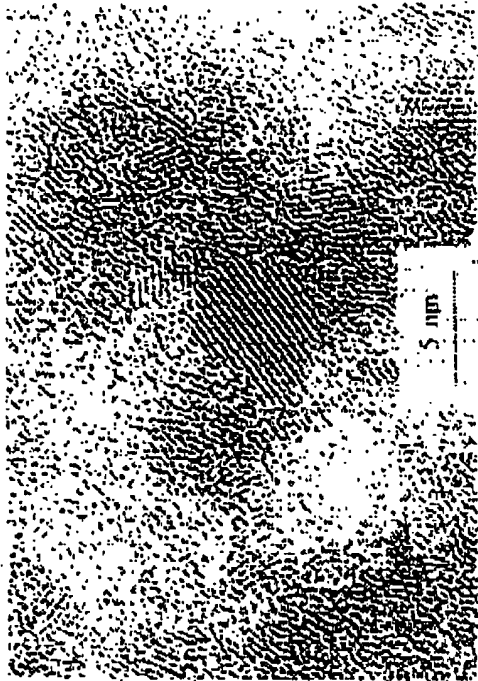
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Figure 2. Electron micrographs of particles formed by the method of US 5,906,670 and published by Dobson etc. (left: Ag particles, right: CdS particles).



Ag nanoparticles

(Source: O.V. Salvata, Current Nanoscience, v.1, 25-33, 2005)



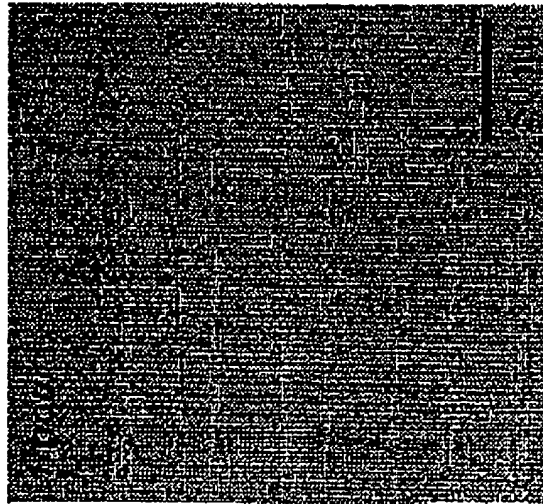
High resolution image of nano CdS particles (source: O.V. Salata, P.J. Dobson, et al Thin Solid Films, v.251, 1-3, 1994)

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Figure 3. Transmission electron micrographs showing the change in size of Cu oxide nanoparticles in accordance with the control of heating period when performing the method of the present invention (left: 1 hour, middle: 2 hours, right: 4 hours).

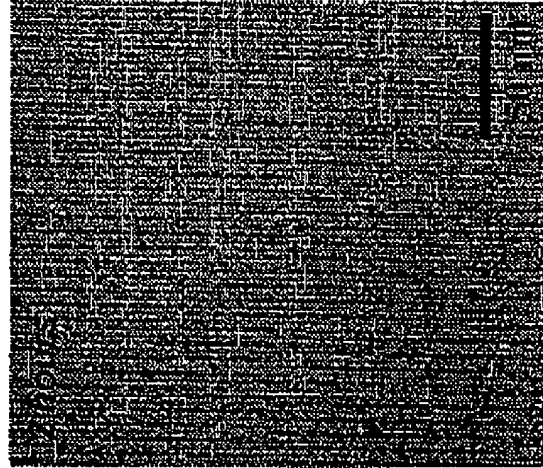
PAA/Cu (6 nm) curing temperature: 350 °C



Particle size: 3.4 nm

Particle density:

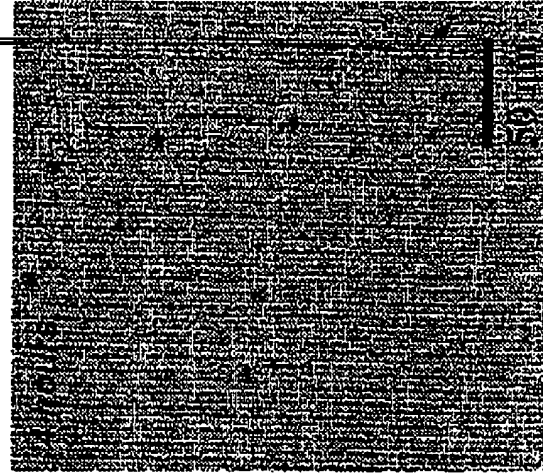
$1.41 \times 10^{12}$  particles/cm<sup>2</sup>



Particle size: 4.1 nm

Particle density:

$2.0 \times 10^{12}$  particles/cm<sup>2</sup>



Particle size: 9 nm

Particle density:

$0.76 \times 10^{12}$  particles/cm<sup>2</sup>